

WE CLAIM:

1. A sensor strip for determining the concentration of an analyte in a sample, the sensor strip comprising:
 - (a) a first substrate having a proximal end and an opposite distal end, the distal end being configured and arranged for insertion into a sensor reader, the first substrate defining a first side edge and a second side edge of the sensor extending from the proximal end to the distal end of the first substrate;
 - (b) a second substrate positioned over the first substrate;
 - (c) a spacer between the first and second substrates defining:
 - (i) a first aperture along the proximal end of the sensor,
 - (ii) a second aperture along the first side edge of the sensor, and
 - (iii) a sample chamber extending from the first aperture to the second aperture, the sample chamber comprising a measurement zone having a volume of no more than 1 microliter;
 - (d) at least one working electrode on the first substrate; and
 - (e) at least one counter electrode on the first substrate, with a portion of the counter electrode located 25-1000 micrometers from a portion of the at least one working electrode.
2. The sensor strip according to claim 1 further comprising at least one indicator electrode on at least one of the first and second substrates and positioned relative to the sample chamber to determine when the sample chamber contains sample.
3. The sensor strip according to claim 1 having a portion of the counter electrode located no more than 200 micrometers from a portion of the at least one working electrode.

4. The sensor strip according to claim 1 having a measurement zone having volume of no more than 0.5 microliter.
5. The sensor strip according to claim 4 having a measurement zone having a volume of no more than 0.2 microliter.
6. The sensor strip according to claim 1 further comprising a redox mediator on the at least one working electrode.
7. The sensor strip according to claim 6, wherein the redox mediator is a non-leachable redox mediator.
8. The sensor strip according to claim 6, wherein the redox mediator comprises an osmium redox mediator.
9. The sensor strip according to claim 1, further comprising an analyte-responsive enzyme in the measurement zone.
10. The sensor strip according to claim 1, wherein the first side edge and the second side edge are parallel to one another.
11. The sensor strip according to claim 10, wherein the first substrate is rectangular.
12. The sensor strip according to claim 1, further comprising a second working electrode on the first substrate.
13. The sensor strip according to claim 1, wherein the analyte is glucose and the sample is blood.

14. A sensor strip for determining the concentration of glucose in a blood sample, the sensor strip comprising:

- (a) a first substrate having a proximal end and an opposite distal end, the distal end being configured and arranged for insertion into a sensor reader, the first substrate defining a first side edge and a second side edge of the sensor extending from the proximal end to the distal end of the first substrate;
- (b) a second substrate positioned over the first substrate;
- (c) a spacer between the first and second substrates defining:
 - (i) a first aperture along the proximal end of the sensor,
 - (ii) a second aperture along the first side edge of the sensor, and
 - (iii) a sample chamber extending from the first aperture to the second aperture, the sample chamber comprising a measurement zone having a volume of no more than 1 microliter, with an osmium redox mediator and glucose oxidase present in the measurement zone;
- (d) at least one working electrode on the first substrate; and
- (e) at least one counter electrode on the first substrate, with a portion of the counter electrode located 25-1000 micrometers from a portion of the at least one working electrode.

15. The sensor strip according to claim 14 having a portion of the counter electrode located no more than 200 micrometers from a portion of the at least one working electrode.

16. The sensor strip according to claim 14 having a measurement zone having volume of no more than 0.5 microliter.

17. The sensor strip according to claim 16 having a measurement zone having a volume of no more than 0.2 microliter.